

A SYNOPSIS OF THE APHID TRIBE PTEROCOMMINI.

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As in all other groups of the *Hemipterous* family *Aphididæ* the species grouped under the tribe name *Pterocommini* have been greatly mixed by different writers and as a result much confusion exists. In this paper the writer hopes to eliminate at least a part of this.

All the known species commonly feed on willows and poplars; one species is recorded as also being found on maple. Three species (*P. salicis*, *populea* and *flocculosum*) are recorded from Europe and five from America (*P. populea*, *smithiæ*, *flocculosum*, *bicolor* and *salicis*). The writer has never found the last nor has he seen specimens collected in this country. In all ten species have been described as follows:

- 1758 *Pterocomma* (*Aphis*) *salicis* Linn.
- 1843 *Pterocomma* (*Aphis*) *populea* Kaltenback.
- 1879 *Pterocomma pilosa* Buckton.
- 1842 *Pterocomma* (*Aphis*) *saliciti* Harris.
- 1862 *Pterocomma* (*Lachnus salicola*) Uhler. New name for *Aphis saliciti*.
- 1879 *Pterocomma* (*Chaitophorus*) *smithiæ* Monell.
- 1887 *Pterocomma* (*Melanoxanthus*) *flocculosus*. Weed.
- 1891 *Pterocomma* (*Cladobius*) *beulahensis* cockerell.
- 1909 *Pterocomma* (*Cladobius rufulus* Davidson.
- 1910 *Cladobius lanthane* Pass (Koch) Henrich.

Generic Synonymy.

Aphidologists in general have divided the species of this tribe into two groups based as a rule upon the structure of the nectaries, although Buckton erected the genus *Pterocomma* for his species *P. pilosa* on what he thought was a peculiar wing structure. (Pergande³⁰ believes this apparent character due to a fold in the wing.) Those species having swollen nectaries have been placed in one genus and those having cylindrical nectaries were placed in another. Such a distinction was also made by the writer in 1909, but after having further studied the group I am of the opinion that such a division is illogical and if a division is necessary each species should form a different genus. It, therefore, seems more practical to confine all the species to a single genus.

The genus name *Cladobius* found by Koch, 1857, was previously used in *Coleoptera*, 1837. Passerini, 1860, suggested a new name, *Aphioides*, but the writer believes that this is a

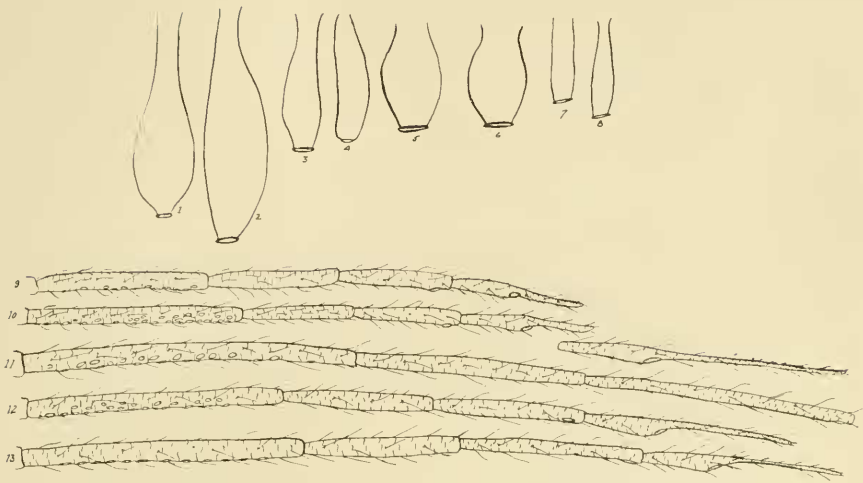


Figure 1. Nectary of *P. salicis*; Figure 2, Nectary of form found in U. S. (*bicolor?* *salicis?*) possibly new. Figure 3, Nectary of *P. bicolor*; Figure 4, Nectary of *P. flocculosa*; Figures 5 and 6, Nectaries of *P. smithiae*; Figures 7 and 8, Nectaries of *P. populea*; Figure 9, antennæ of *P. smithiae*; Figure 10, antennæ of *P. populea*; Figure 11, antennæ of *P. flocculosa*; Figure 12, antennæ of *P. bicolor*; Figure 13, *P. salicis*.

Pterocomma salicis Linn.

Synonymy: *Aphis salicis*, Linn. Reaum., Fabr., Schrank, De Geer, Kalt.

- Melanoxanthus salicis* Linn (Buckton).
- ? *Melanoxanthus salicis* Linn (Weed).
- ? *Melanoxanthus salicis* Linn (Packard).
- ? *Melanoxanthus salicis* Linn (Osborn).
- ? *Melanoxanthus salicis* Linn (Cowen).
- Melanoxantherium salicis* Linn (Schouteden).
- ? *Melanoxantherium salicis* Linn (Gillette).
- Melanoxantherium salicis* Linn (Wilson).

Since this species does not seem to occur in America it is not possible to secure a description from live material. A detailed description of what appears to be this species is given by Kaltenback and Buckton, figures accompanying the latter. Buckton's description is included here with additional notes made by myself from material on slides and in alcohol.

Apterous viviparous female.

	Inch	Millimeters
"Size of body.....	0.150 x 0.80	3.81 x 2.02
Length of Antennæ.....	0.080	2.02
Length of cornicles.....	0.015	0.38

“Very large, long oval, abdomen pointed. Dull sooty-black or greyish black, with a faint greyish medial stripe. Prothorax with a blunt tooth-like process on each side. Two broad pale grey patches on each side of the first abdominal ring—smaller patches on each side of the succeeding rings, those at and below the insertions of the cornicles being the largest. Antennæ orange red. The seventh joint small, hardly equal to the sixth. The cornicles bright orange, skittle-shaped, with dilated mouths; very short. Legs orange, with dark tibial joints and tarsi. The whole insect pilose. The under-side is of obscure greyish-green. Rostrum long, reaching to the third coxæ. The young insects are black and prettily streaked with grey. Their rostra are longer than those of the adult.”

Winged viviparous female.

	Inch	Millimeters
“Expanse of wings.....	0.400	10.16
Size of body.....	0.120 x 0.050	3.04 x 1.27
Length of antennæ.....	0.080	2.02
Length of cornicles.....	0.020	0.50

“Very large, greyish black, pilose. Antennæ short, having all joints black except the third and fourth, which are orange. Abdomen with two or more grey dorsal patches. Cornicles bright orange. Legs as in the larvæ. Eyes dark brown. Wings ample.” “All veins are black and strongly marked.”

The writer finds that the antennæ reach to the middle of the abdomen and that the third segment is the longest. From 14 to 20 round sensoria, irregularly placed on the inner side, occur on the third segment. The wings have dark veins as indicated, but hardly appear different from those of other species. The nectaries are the distinguishing characteristic as they are quite distinct in shape. See drawings.

Pterocomma flocculosa (Weed)³³.

Synonymy:

- Melanoxantherium flocculosus (Weed)^{33a, 34}.
- Melanoxantherium flocculosum (Weed) Schouteden.
- Melanoxantherium flocculosum (Weed) Gillette.

That this species commonly occurs in Europe is shown by the fact that the writer has received specimens both from Russia and France, and Schouteden has recorded it from Belgium.

This species has never been collected by myself and it apparently does not occur on the Pacific Coast. For this reason color notes are taken from the original descriptions and the additional notes were made from specimens collected in Colorado and Maryland and mounted on slides.

“*Oviparous Female*.—Body 3-5 mm. long by 2 wide across middle of abdomen; antennæ 2-3 mm. long.

“General color dull, yellowish-brown, with a longitudinal row of indistinct black spots on each side of dorso meson; cornicles bright orange red, antennæ dusky, except basal portion of third joint, which is yellowish brown; legs dusky, with basal portion of femora, and sometimes more or less of tibia, dark yellowish-brown. Body, legs, and antennæ pilose; Joint III of antennæ long, but shorter than IV plus V, which are subequal; VI and VII each rather long, the latter the longer of the two. Cornicles long for this genus; swollen in the middle.

“*The Egg*.—Length, 1-2 mm.; oblong oval, coated with a thin gray substance like that on the egg of *M. salicis*; deposited on the bark, about the buds and axils, especially where the surface is roughened. Later he also describes what he believes to be the wingless male.”

Apterous viviparous female: As a rule among the species of this group the apterous forms are almost exactly alike except in size and one would expect this form to resemble very closely in color markings, the oviparous female. Observations made from a slide containing several apparently apterous forms show the third antennal segment with about 14 round sensoria lying in a more or less regular line along the inside edge. In the alate form there are from 17 to 25 on the third segment. Along each side of the body may be found, one to each segment, a row of the thick short tubercles. Nectaries long and swollen, but sides tapering gradually and not suddenly bulged as in *P. salicis*. Opening at tip small and apparently without a flange. Entire body and legs covered with long hair.

Measurements and Length of Body.—3.6 mm.; width 1.5 mm. Length of antennal segments, III, 0.75 mm.; IV, 0.51 mm.; V, 0.5 mm.; VI, 0.22 mm.; spur 0.28 mm. Total length 2.65 mm. Length of nectaries, 0.4 mm.

Alate viviparous female: Body large, broadly ovate, antennæ reaching the center of the abdomen. Antennæ rather slender and with the third segment bearing from 17 to 25 round sensoria along the inner side. Wings normal, veins clear. Abdomen probably with dentate tubercles on sides, but not visible on specimens at hand. Nectaries of shape indicated in drawings.

Measurements: Length of body, 3.28 mm.; width across abdomen, 1.5 mm. Length of antennal segments, III, 0.79 mm.; IV, 0.51 mm.; V, 0.62 mm.; VI, 0.26 mm.; spur, 0.43 mm. Length of nectaries, 0.4 mm. Length of wing, 4.64 mm.

Pterocomma bicolor (Oestlund).

Synonymy:

- Melanoxanthus bicolor* (Oestlund).
- Melanoxanthus bicolor* (Oest.) Weed.
- ? *Melanoxanthus salicis* (Linn.) Weed.
- ? *Melanoxanthus salicis* (Linn) Packard.
- ? *Melanoxanthus salicis* (Linn) Osborn.
- ? *Melanoxanthus salicis* (Linn) Weed.
- ? *Melanoxanthus salicis* (Linn) Cowen.
- Melanoxantherium salicis* (Linn) Gillette.

In America there are two types of nectaries among the specimens designated as *Melanoxantherium salicis* Linn. One of these, as indicated in the accompanying drawings, the writer considers to be the one above indicated. For lack of proper evidence in rearing specimens the writer also considers the other type indicated as being a form of this species. However, later investigations may show the two to be from separate species. Certainly it is not *Aphis salicis* of Linn. for the writer has nineteen specimens of this group from France and Russia labeled *Melanoxanthus salicis* Linn. and the nectaries are quite distinct from any found on specimens collected in this country. It would seem then that the species *Pterocomma salicis* Linn. does not occur in America and the one or more species so determined are something else.

Alate viviparous female: General color, brownish, tinged with yellow. Antennæ with first two segments and the distal portions of 3 and 4, opaque, bases of third and fourth lighter with a yellowish tinge, fifth and sixth segments black. Head and thorax shining dark brown. Abdomen reddish brown with the dorsal lobes with dusky patches and a light brown median line on the dorsum. Legs yellow at the base of each part and dusky towards the ends, tarsi black. Nectaries

yellow with tips slightly dusky. Cauda black, entire body quite hairy and lightly covered with white powdery wax. Antennæ with from 20 to 25 round sensoria along the inner edge. The prothorax bears a single pair of dentate tubercles placed one on each side. Similar tubercles are also found on each segment of the abdomen. Wings with normal venation, nectaries about twice the length of the tarsi and swollen towards the ends. Just back of the flanged tip they are strongly constricted. Cauda broadly angular.

Measurements: Length of body 4.1 mm.; width 2.3 mm. Length of Antennal segments, III, 0.6 mm.; IV, 0.36 mm.; V, 0.35 mm.; sixth and spur, 0.5 mm. Length of nectaries, 0.59 mm.; Cauda, 0.34 mm. Wing expanse, 9.89 mm.

Apterous viviparous females: General color reddish brown, antennæ colored as in the alate form. Head chocolate brown and thoracic lobes slightly lighter, but darker than the abdomen. Abdomen with a series of dark spots or splotches on the dorsum and separated in the middle by a light brown median line. Similar spots may be found on the sides of the abdominal segments. A row of dentate tubercles occurs along side of the body, each abdominal segment and the prothorax having one on a side. Antennæ yellowish brown at the base and shading to black at the tip. Legs yellowish brown with the tips of the tibia and femora dusky. Tarsi black. Nectaries yellowish brown, slightly dusky at the tip. Cauda dusky brown and broadly angled.

Measurements: Length of body 3-7; width across abdomen, 1.71 mm. Length of antennal segments, III, 0.61 mm.; IV, 0.285 mm.; V, 0.34 mm.; VI, 0.9 mm.; spur, 0.28. Total length, 1.88 mm. Length of nectaries, 0.428 mm.

Pterocomma populea Kalt.

Synonymy:

- Aphis populea* Kaltenback.
- Cladobius populeus* (Kalt) Koch.
- Aphioides* (*Cladobius*) *populeus* Pass.
- Pterocomma pilosa* Buckton.
- Cladobius populeus* (Kalt.) Lichtenstein.
- Cladobius populeus* (Kalt.) Mordwilko¹⁻²⁻³.
- Cladobius populeus* (Kalt.) Del geurcio.
- Cladobius populeus* (Kalt.) Pergande.
- Cladobius beulahensis* Cockerell.
- Cladobius populeus* Henrich.
- Cladobius rufulus* Davidson.
- Pterocomma pilosa* (Buckton) Wilson.
- Melanoxantherium rufulus* (Davidson) Essig.

Alate viviparous female: General color brown, but appearing grayish brown because of a covering of white waxy powder. Head brownish black, antennæ dusky to dark with the bases of the first to fourth segments opaque yellow or white. They extend to the base of the abdomen. Eyes red and rather prominent. Thorax shining amber to brownish black; wings normal; legs opaque brown. Prothorax with a single dentate tubercle on each side. Abdomen amber colored, grayish green below and dark brown above. Usually with a series of transverse bars on the dorsum broken down the center by a transverse white line. Also a series of black spots, one to each segment along the side and with a short stout tubercle in the center of each spot. Nectaries light opaque brown, dusky at the tip. Cauda yellowish-brown at base, dusky at tip. Body stout, abdomen broadly ovate. Antennæ reaching to base of abdomen, third segment along the outer edge. Wings normal with the median vein twice forked. Nectaries about as long as the tarsi and rather slender but swollen towards the tip. They are constricted just back of the tip, which is broadly flanged. Cauda short and angular. Entire body thickly set with black hairs.

Measurements: Length of body 3.7 mm.; length of antennal segments III, 0.65 mm.; IV, 0.4 mm.; V, 0.4 mm.; VI and spur, 0.6 mm. Total length 2.15 mm. Length of nectaries, 0.39 mm.; length of cauda, 0.4 mm. Wing expanse, 9. mm.

Apterous viviparous female: General color reddish-brown, but appearing more or less gray on account of the white waxy powder which covers the entire body, body oval, tapering towards the ends. Entire body covered with hairs. Above, the abdomen has a narrow white median line along the dorsum and a series of narrow transverse white lines which separate the segments. Along each side of the abdomen may also be found a series of black spots, one to each segment and in the center of each a denate tubercle. Antennæ with first two segments dusky or black; third segment opaque with a tinge of light brown, remaining segments shading from dusky to black toward the tip. Third segment without sensoria, fifth with one large near the distal end and sixth with one large and a series of small sensbria at the base of the spur. Legs with coxæ and base of femora light yellow, tibiæ and tarsi dark

brown to black. Nectaries shorter than in the alate form and individuals taken at certain times of year with apparently cylindrical nectaries. The normal shape, however, is slightly swollen as seen in the illustration. Cauda short and broadly angular.

Measurements: Length of body, 3.3 mm.; width of abdomen, 1.7 mm. Length of antennal segments, III, 0.53 mm.; IV, 0.35 mm.; V, 0.35 mm.; VI, with spur, 0.53 mm. Total length, 1.92 mm. Length of nectaries, 0.34 mm.

The oviparous females resemble the *Apterous viviparous* forms so closely, except that they are larger than a separate description is not necessary. The males resemble the alate viviparous forms closely, but are much smaller. These two forms are quite common on the twigs and leaves of poplar along the streams of the Pacific Coast during October and November.

The eggs which are deposited about the base of the buds are green at first, later turning to a shining black. They are elongate oval in shape and measure about 1 mm. in length.

***Aphis salicis* Harris.**

Aphis salicis Harris (Walsh).

Melanoxanthus salicis (Harris) Oestlund.

Melanoxanthus salicis (Harris) Weed.

Cladobius salicis (Harris) Davidson.

Cladobius salicis (Harris) Essig.

Lachnus salicicola Uhler, Thomas, Packard, Osborne.

The writer believes that on account of the short description given by Harris that this species is not valid and that the notes and records in most cases refer to *Pterocomma smithiæ* Monell.

In the third edition of Harris' "Insects of Mass." Uhler proposes to use *Lachnus salicicola* for *Aphis salicis* and from that date a number of writers have used that name.

***Pterocomma smithiæ* Monnell.**

Synonymy:

? *Aphis salicis* Harris.

Chaitophorus smithiæ Monell.

Chaitophorus smithiæ (Monell) Thomas.

Melanoxanthus smithiæ (Monell) Weed.

Melanoxantherium smithiæ (Monell) Gillette.

Melanoxantherium smithiæ (Monell) Davis.

This is undoubtedly the same species as *Aphis salicis* Harris, but his description is too meager to determine the species

with any degree of certainty and notes and records made under this name and under that of *Lachnus solivicola* Uhler could not have been based upon definite knowledge of the species in question. On the other hand, *smithiæ* is a definitely determined and well known species, the validity of which is unquestionable. It is commonly found on willow and poplar in Canada, Mexico and the United States. It has also been recorded from Maple by Weed, and I have specimens in my collection from privet hedge, Santa Cruz, Mexico, by F. C. Bishop.

Apterous viviparous female: General color black and brownish-yellow, but all specimens have a bluish-black appearance because of the whitish powder found covering the body. Antennæ dusky at base, third and lower half of fourth segments yellow; remaining proportions dusky to black. Legs with coxæ femora and basal two-thirds of tibiæ brown, outer portion of tibiæ and tarsi black. Nectaries yellow. Antennæ shorter than in other species of the group and more nearly like those of the *Lachninaæ*. Apparently without sensoria on the third segment. Abdomen with a row of broad short tubercles along each side. Nectaries short, swollen in the middle and contracted at both ends. Opening widely flanged. Cauda short and broadly rounded.

Measurements: Length of body, 2.8 mm.; width, 1.5 mm.; length of antennal segments, III, 0.5 mm.; IV, 0.28 mm.; V, 0.26 mm.; VI, 0.14 mm.; spur, 0.18 mm. Total length, 1.5 mm. Length of nectaries, 0.26 mm.

Alate viviparous female: General color black and brownish-yellow, but appearing bluish on account of the white waxy covering found over the entire body. Antennæ with two basal segments dusky-black. Third segment yellowish at base and dusky toward tip, remaining segments dusky to black. Legs with coxæ, femora and basal half of tibiæ yellow; remaining portion of tibia and tarsi black. Wing venation normal, veins slightly darkened. Nectaries yellow, tinged with brown. Cauda black. Antennæ extending slightly beyond the third pair of legs, and third segment bearing from 19 to 26 circular sensoria irregularly placed along the inner side. Thorax and abdomen with a row of thick short tubercles along each side. Nectaries short, swollen in the middle and strongly

constricted at both ends. Opening at tip large and widely flanged. Cauda short and broadly rounded.

Measurements: Length of body, 3 mm.; width, 1.2 mm. Length of antennal segment, III, 0.44 mm.; IV, 0.26 mm.; V, 0.27 mm.; VI, 0.14 mm.; spur, 0.14 mm. Total length of antennæ, 1.42 mm. Length of nectaries, 0.3 mm. Length of wing, 4.7 mm.

Cladobius lanthanæ (Pass) Koch (Henrich).

Henrich lists *Aphis lantanæ* Koch under the above name and refers it to Passerini. The writer has never seen this species, but from the description given by Koch and his figures I am of the opinion that it does not belong here.

He also records a species under the name of *Cladobius ? salicis* (m) from trauerweide (Weeping Willow).

BIBLIOGRAPHY.

1. 1879—Buckton, G. B., Mon. Brit. Aphids, II pp. 21-23 and 142-144 Fig.
2. 1904—Cockerell, T. D. A., Canadian Ent. XXXVI, p. 263.
3. 1895—Cowen, J. H., Col. Agr. Col. Ex. Sta. Bull. 31, p. 117.
4. 1909—Davidson, W. M., Jour. Econ. Ent. II, p. 414.
5. 1910—Davidson, W. M., Jour. ibid III, p. 375.
6. 1910—Davis, J. J., Jour. Econ. Ent. III, p. 414.
7. 1911—Davis, J. J., Univ. of Nebraska Studies, XI, No. 3, p. 7 Figs.
8. 1773—De Geer.
9. 1900—Del. Guercio, G., Nove Relaz. R. Staz. Ent. Agraria. Florence, Italy, Ser. 1. No. 2, p. 120.
10. 1911—Essig, E. O., Pomona Jour. Ent. III. No. 2, p. 46.
11. 1912—Essig, E. O., ibid IV, No. 3, pp. 786 and 827.
12. 1794-1803—Fabricius, J. C., several citations but not sufficient description to designate the species.
13. 1909—Gillette, C. P., Jour. Econ. Ent. II, p. 385.
14. 1910—Henrich C., Die Blattläuse Aphididae Emgebund von Hermannstadt, p. 55.
15. 1843—Kaltenback, J. H., Monographic der Pflanzenläuse.
16. 1905—Kirkaldy, G. W., Canadian Ent. Vol. XXXVII. p. 415.
17. 1857—Koch, C. L., Die Pflanzenläuse Aphiden p. 252.
18. 1884—Lichtenstein, J., La Flore Aphidiens. Montpellier.
19. 1879—Monell, J. T., U. S. Geol. Surv. Bull. V., p. 200.
20. 1894-95—Mordwilko, A., Rab. Lab. Zool. Kab. Warsaw. Vol.?
21. 1908—Mordwilko, A., Ann. Rept. Imperial Acad. Sci. St. Petersburg.
22. 1914—Mordwilko, A., Fauna Russia and Limitrophic Countries. Zool. Mus. Acad. Imp. Sci. Petrograd.
23. 1758-89—Linnæus, C., Systemæ Naturæ. 10th edition (Notes of small value).
24. 1886—Oestlund, O. W., Geol. Nat. Hist. Surv. Minn. p. 52.
25. 1887—Oestlund, O. W., Geol.-Nat. Hist. Surv. Bull. 4 pp. 35-36.
26. 1892—Osborn, H., Cat. Hem. Ia. p. 129.
27. 1890—Packard, A. S., U. S. Ent. Comm. 5th Rept. p. 592.
28. 1860—Passerini, G. Gliafidi, Pomona p. 28.
29. 1863—Passerini, G. Gliafidi, Aphididæ Italicæ, p.?

30. 1900—Pergande, Theo., *Prac. Acad. Sci. Wash.* II, p. 516.
- 31.? 17—Reaumur, III, pl. 22, Fig. 2.
32. 1898—Rubsaamen, *Bibl. Zool.* XX, p.?
33. 1801—Schrank, *Fauna Boica* II, p. 102.
- 33a. 1900—Schouteden, H., *Ann. Soc. Ent. Gelg.* XLIV, p. 128.
34. 1906—Schouteden, H., *Ann. Soc. Ent. Belg.* I.
35. 1879—Thomas, C., *Eight Rept. State Ent.* III, p. 200.
36. 1889—Weed, C. M., *Psyche* V, 208-209.
37. 1890—Weed, C. M., *Ohio Agr. Exp. Sta. Bull. Tec. Ser. I. No. 2.* Fig.
38. 1891—Weed, C. M., *Insect Life* III, 290-292.
39. 1893—Weed, C. M., *Trans. Amer. Ent. Soc.* XX, p. 300.
40. 1861—Walsh, B. D., *Prac. Ent. Soc. Phil.* I, p. 298.
41. 1891—Williams, T. A., *Dept. of Ent. Univ. of Nebraska sp. Bull.* 1.
42. 1911—Williams, T. A., *The Aphid Neb. Univ. Studies* X, No. 2, p. 34.
43. 1910—Wilson, H. F., *Canadian Ent.* XLII, p. 384.
44. 1915—Wilson, H. F., *Proceedings Ent. Soc. British Columbia*, No. 5, N. S. p. 84.